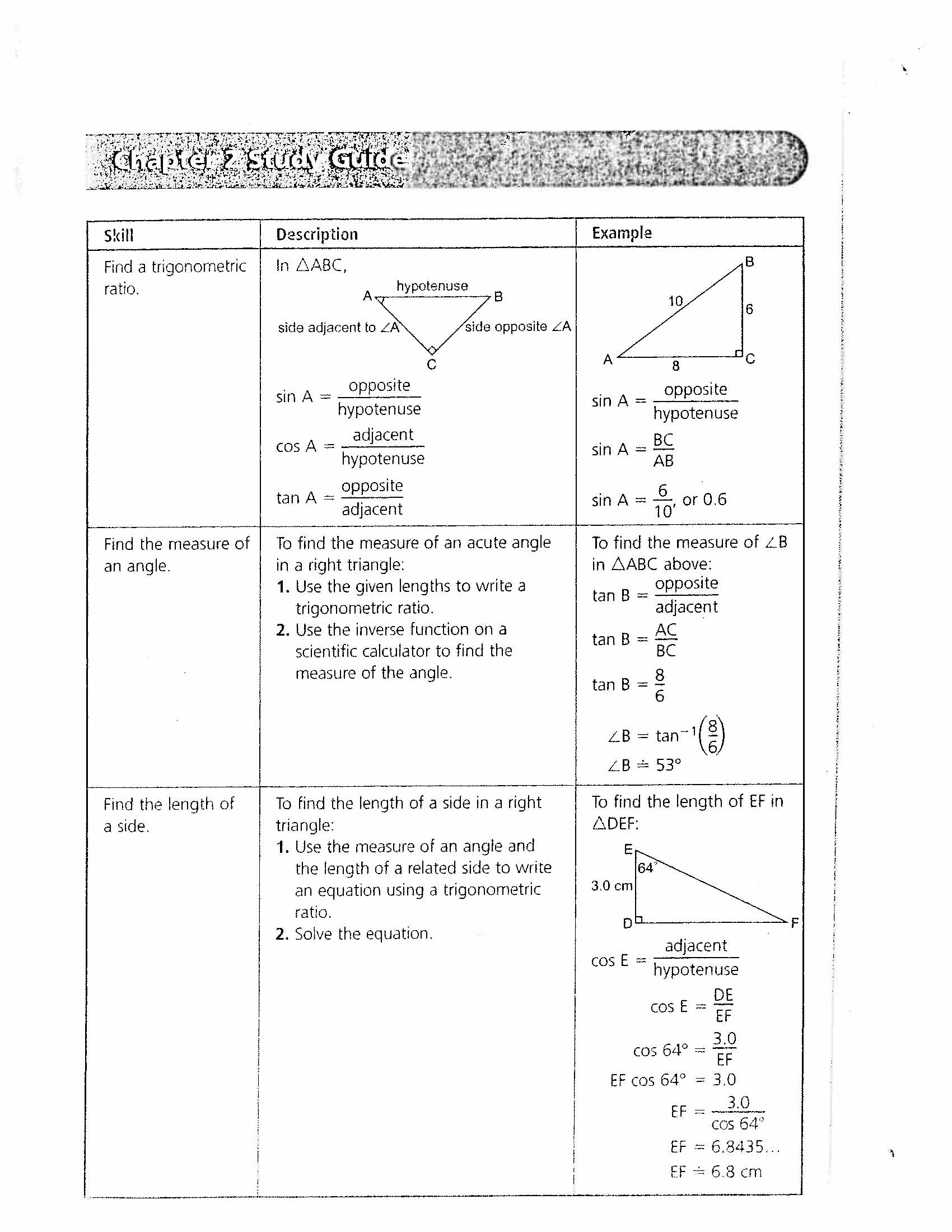


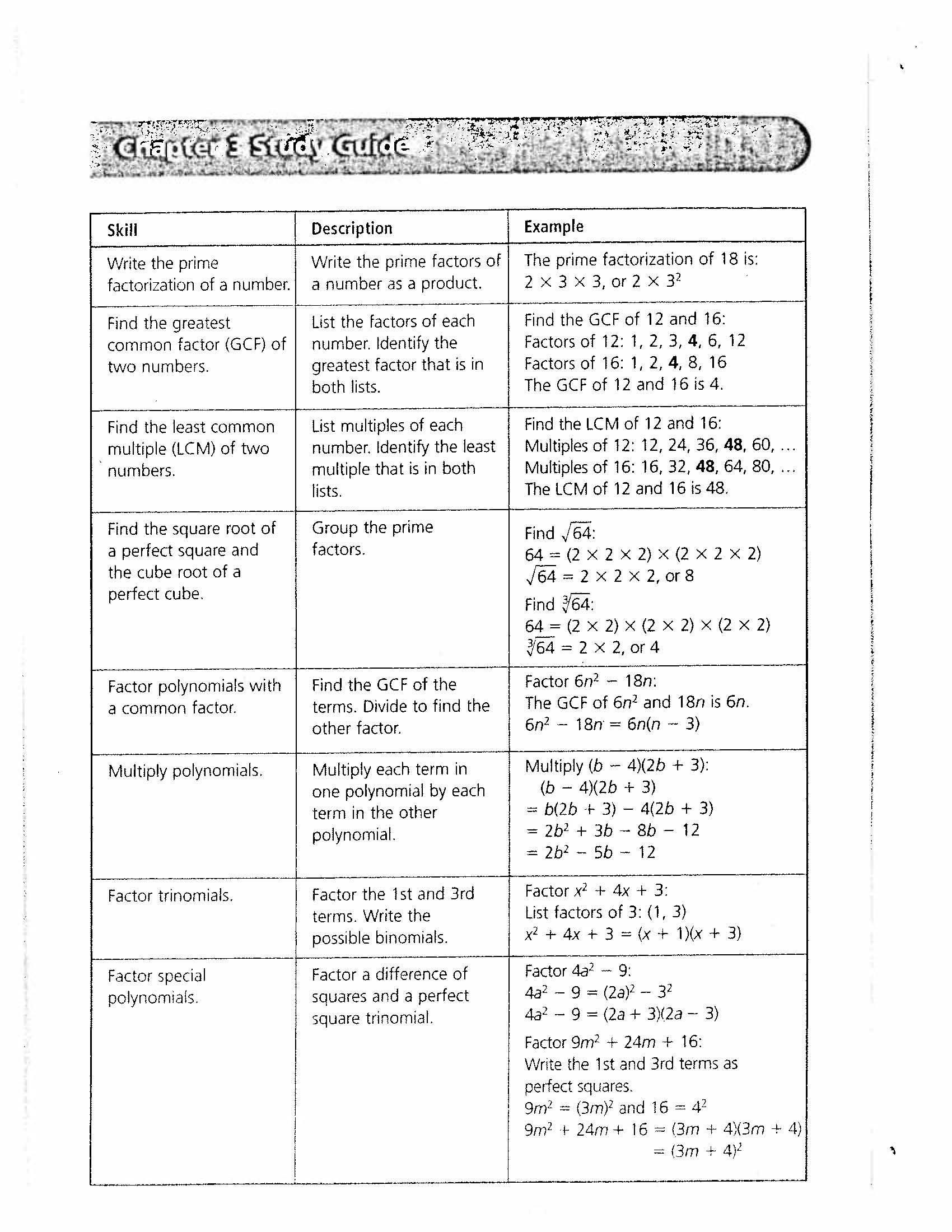
Math 10

Final Exam Course Review

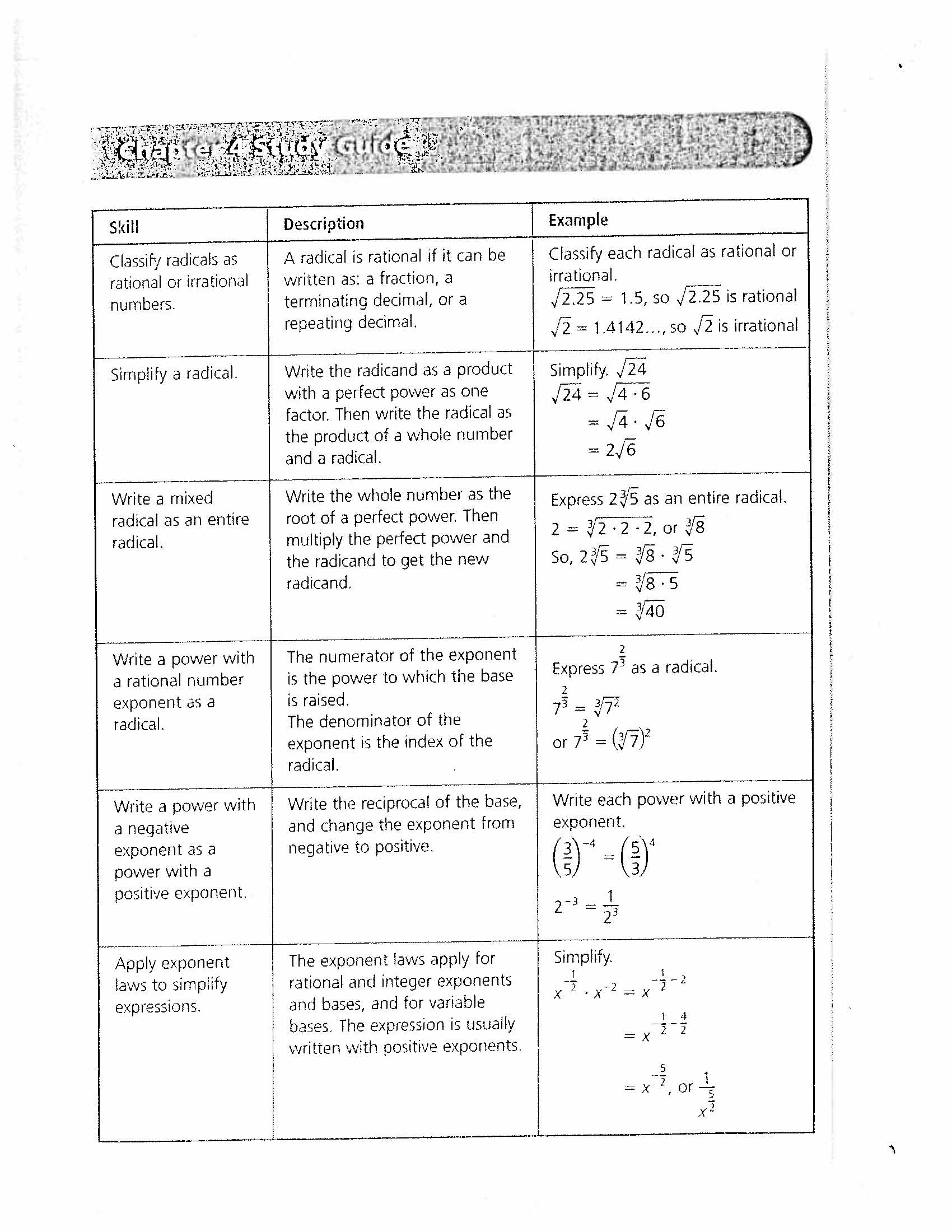
**Chapter 1 TOPICS**



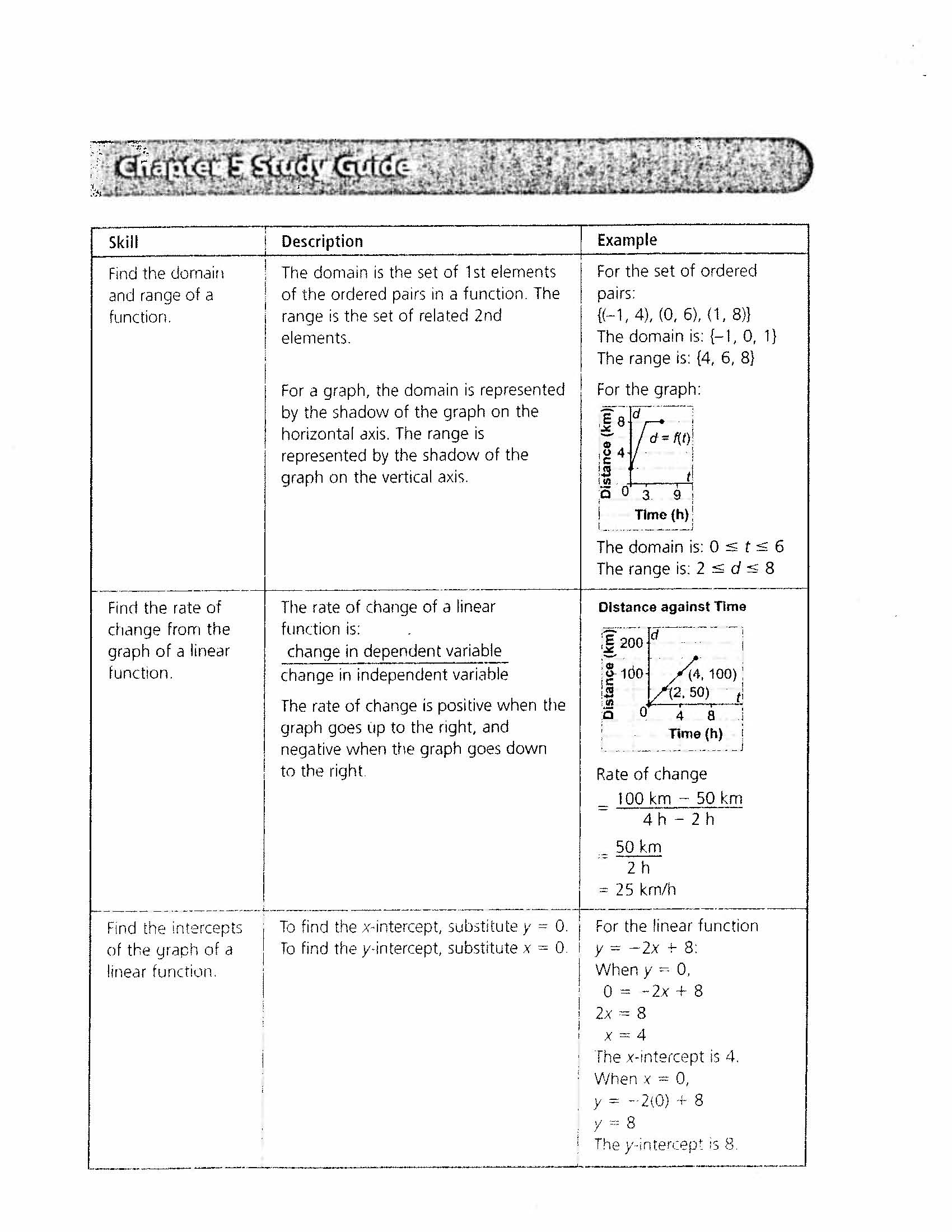
**Chapter 2 TOPICS**



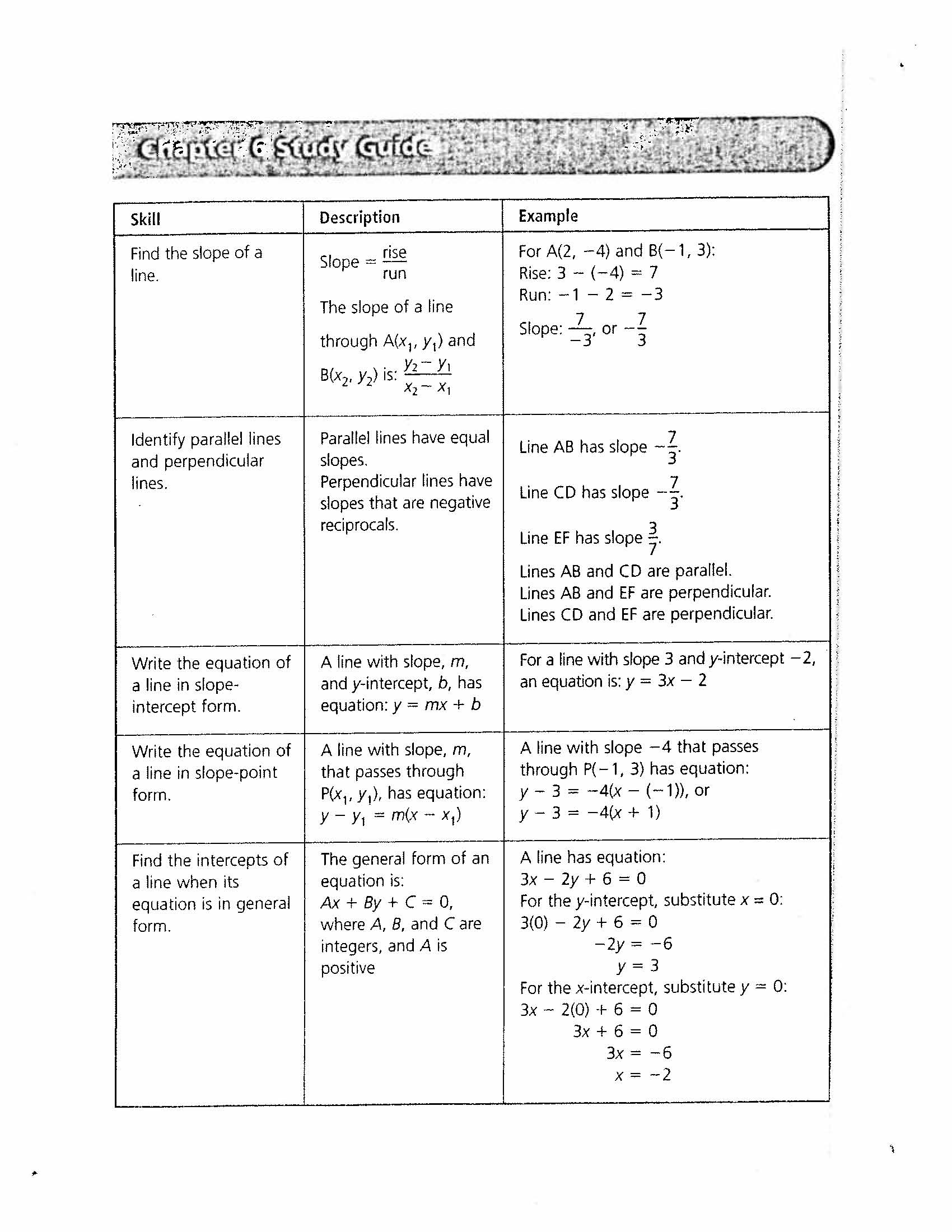
**Chapter 3 TOPICS**



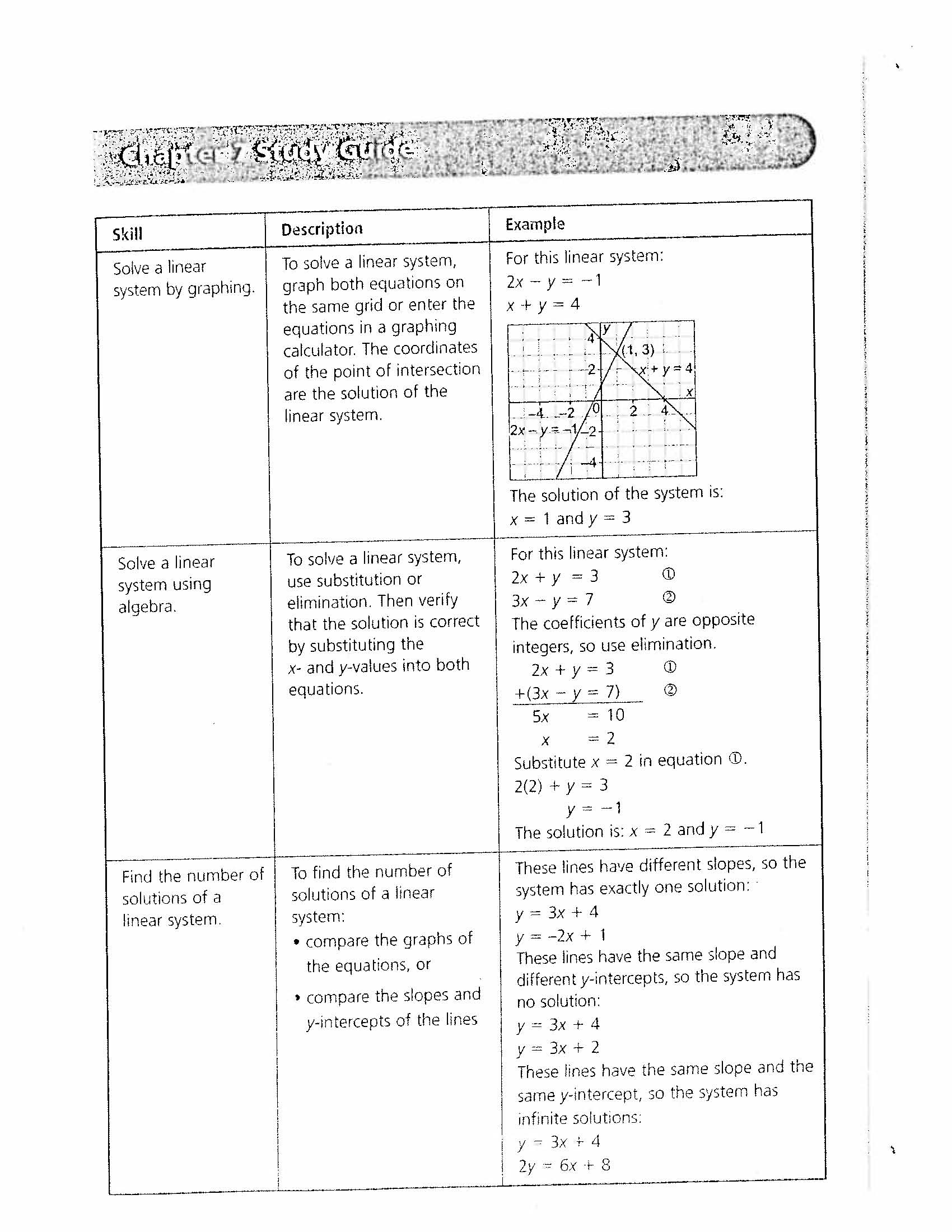
**Chapter 4 TOPICS**



**Chapter 5 TOPICS**



**Chapter 6 TOPICS**



**Chapter 7 TOPICS**

Math 10

Final Exam Course Review – January 2011

**A: Conversions and Measurement** FP10.3

1. Convert each of the following

(a) convert 1458 m to miles (b) convert 3 yd 2 ft to cm.

Solving Problems Involving Objects

1. A hemisphere has a diameter of 10 feet.

(a) What is the surface area of this hemisphere, to the nearest square foot?

(b) What is the volume of the hemisphere, the nearest cubic foot?

2. A right rectangular pyramid has a base with dimensions 8m by 7m, and height of 6 m.

Determine the surface area of this pyramid to the nearest square m.

3. A bowl of sugar was knocked over. The spilled sugar formed a cone with a

radius of 4 cm and a slant height of 6 cm. How much sugar was in the pile?

**B: Trigonometry**

Determine side and angle measurements

1. Refer to the right triangle below. FP10.4

a) Find the measure of ∠A and ∠B to the nearest degree.

5 km ∠B

7 km

∠A

b) Now find the length of the missing side.

2. Determine the length of x:

x

55o

12 mm

3. Determine the missing angles:

4 m

11 m

4. Find the values of the following to 4 decimal places using your calculator: (a) sin 34° = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(b) cos 58° = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(c) tan 46° = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

5. If cos θ = 0.5402, find the measure of angle θ rounded to one decimal place.

6. Solve the triangle found below.

A 17.4 cm C m ∠ A = \_\_\_\_\_\_\_\_\_

m ∠C = \_\_\_\_\_\_\_\_\_

34°

= \_\_\_\_\_\_\_\_\_

B = \_\_\_\_\_\_\_\_\_

Problem Solving involving one or more right Triangles

1. A flagpole casts a shadow that is 25 m long when the angle of between the sun’s ray and the ground is 40 degrees. What is the height of the flagpole to the nearest meter?

2. An escalator is 14.5 m long. The escalator makes an angle of 27 degrees with the ground. What is the height of the escalator? Give your answer to the nearest tenth of a meter.

**C: Factors and Products**

1. Expand and simplify

(a)  (b) 5 (c) (4 + 3) 2 2. Factor (use prime factorization)

(a) 324 (b) 120

1. Find the Greatest Common Factor

(a) 12 and 18 (b) 24 and 60

4. Find the Least Common Multiple

(a) 12 and 15 (b) 16 and 20

5. Perfect Squares and Cube Roots

(a) Using Prime Factorization find the square and cube root of 64

6. Factor polynomials using a common factor

(a) 6n2 – 18n (b) 6x3y2 + 2xy5

7. Factor Trinomials

(a)  (b)  (c)

8. Factor Difference of Squares and Perfect Square Trinomials

(a) - 16 (b) 

9. Factor out a common factor then use difference of squares

1. -72

**D: Roots and Powers**

1. Use prime factorization to simplify

(a) (b) (b)

2. Write as an Entire radical

(a) 2 (b) 5

3. Estimate to 1 decimal place

(a) (b)

4. Are the following Rational or Irrational Numbers

(a)  (b)

5. Evaluate

(a) 36 (b) 27 (c) 

6. Write Power as a radical 7. Write as a power with a fractional exponent

1. 15 (a)

8. Multiply and Divide

1. 25 ● 23 (b) x ● x-2

(c) 

**E: Functions and Relations**

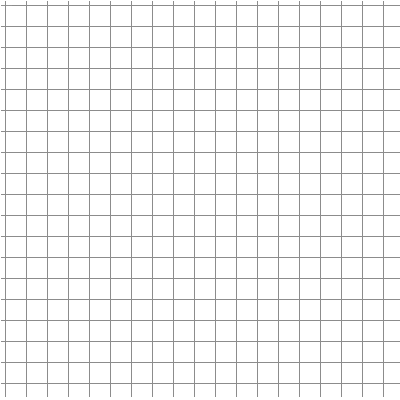
1. Refer to the graph to the right. Is this relation a function?

*x*

Why or why not?

1. Graph 6x +2y = 12 using *x* and *y* intercepts

*x-int* *y-int*



1. Relations. Answer the questions for the following 2 tables

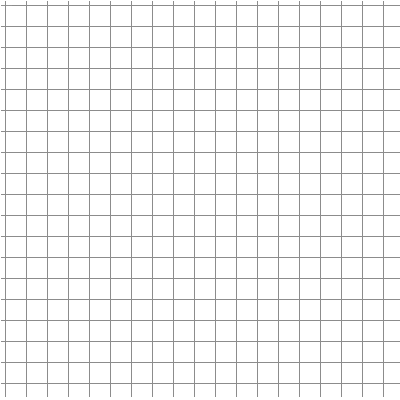
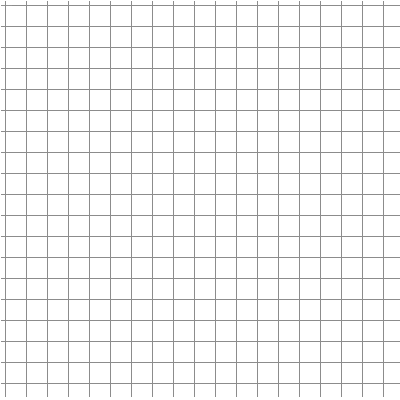
|  |  |
| --- | --- |
| **Athlete** | **Sport**   1. Why is this relation a function? 2. Write the domain and range. Explain any restrictions on them. 3. Represent this relation as an arrow diagram. |
| Crosby | Hockey |
| Jones | Curling |
| Wotherspoon | Speed Skating |
| Ovechkin | Hockey |

|  |  |
| --- | --- |
| **Number of Minutes**  **n** | **Cost, C**   1. Why is this relation a function? 2. Write the domain and range. Explain any restrictions on them. 3. Identify the dependent and independent variables. 4. Does this table represent a linear relation? How could you find out mathematically? From a graph?   **($)** |
| 10 | 2 |
| 20 | 4 |
| 30 | 6 |
| 40 | 8 |
| 50 | 10 |

\_

**8**

1. Find the domain and range for each graph. Are the following Functions? (a) (b)



**D = D =**

**R = R =**

1. Function Notation

Carmen works for a research company. The equation P= 5n + 30 represents her daily pay, P dollars, when she conducts n surveys.

1. Describe the function. Write the equations using function notation.
2. Find the the value of P(8). What does this number represent?
3. Find the value of n when P(n) = 90. What does this number represent?
4. Table of values

Create a table of values for **y = x + 2** and answer whether it represents a linear relation.

1. Rate of Change

****

**a)** Identify the dependent and independent variables.

**b)** Determine the rate of change of each relation, then describe what it

represents.

**F: Linear Functions FP10.6-9**

1. Graph the following linear function in the space provided using the slope and *y*-intercept

 method only. State the slope and *y*-intercept first. 

1. Slope
2. Find the slope of a line that passes through (2, -3) and (-4, 3)
3. Find the slope from the graph to the right.
4. Graph a line whose slope is and goes through (3, 2)
5. Are y = 2x - 3 and  parallel or perpendicular lines? Explain the difference.

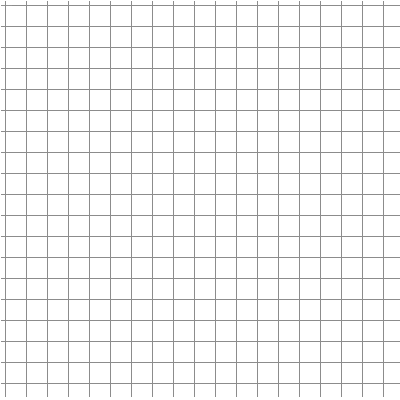
3. Write the equation of the line in the specified form

(a) Write the equation of the line in point-slope form whose slope is 3 and passes

through the point (2, 5)

(b) Write the equation of the line in general form that passes through (0, 3) and (2, 3)

(c) Write an equation in slope-intercept form for the line in the graph below:



(d) Now write that same equations from questions (a), (b), and (c) in standard form and

general form.

(e) Write the equation of a line in Slope-Point form that has a slope of and passes

through (2, -3)

(f) Write the equation of a line in Slope-Point form that passes through (-3,5) and (3,1)

(g) Write the equation y = x – 2 in Standard form and then into general form.